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SPECIFICATIONS FOR OFFICE INFORMATION SYSTEM TO IMPROVE PRODUCTIVITY OF UHM LIBRARY STAFF.

INTRODUCTION

The library staff consists of 160 full time employees, including professionals, APTs, and paraprofessionals, in clerical technical, and administrative positions as well as many part-time student employees. In addition to performing tasks which will be automated upon implementation of the integrated library software system, staff members are also involved in the production of training and instructional materials, guides, memos and letters, procedural documentation, articles for journals and monographs, and research manuscripts.

The major "product" of any univerisity is knowledge, and knowledge is most frequently transmitted in the form of "words". A university library facilitates access to knowledge which in essence improves the quality of the "product" of the university. The processing of words in the library is steadily increasing, but is inhibited by a lack of personnel to support the various administrative, research, and other writing tasks such as those outlined above.

The existing clerical and support staff attempt to handle the major word processing tasks which serve instructional and administrative needs but cannot adequately meet the needs of individual library professionals, researchers, and administrators and the unique needs of the specialized library collections. This results in a backlog of word processing tasks consequently slowing productivity.

The diverse nature of the UHM library collection further complicates moving toward automated word processing. The library not only provides access to materials which are romanizeed using an expanded ALA defined character set it also supports vernacular catalogs in graphics oriented character sets such as Chinese, Japanese and Korean.

PROPOSAL FOR MICROCOMPUTER USE

A. ADVANTAGES OF MICROCOMPUTER-CONTROLLED WORD PROCESSING:

Word processing software relieves staff of the burden of constantly retyping text, simplifies editing, and eliminates the common problem of introducing new errors with each retyping.

Word processing greatly increases the ability to manipulate and print text to specification. Text can be copied, moved, searched, replaced or deleted; documents may be merged to create customized form letters and accomplish substantially more typing than a manual system.

Word processing allows individuals control over their own documents without requiring the supervision of a central system manager. Each user's work is secure and there is minimal opportunity for an inexperienced user to cause any system-wide problems. Word processing requires a minimum use of paper by providing electronic display and modification capabilities.

Word processing programs are simple to use and do not require great familiarity with computers. They provide a less stressful and less training intensive introduction to computer use than is required for other uses of computerized systems.

B. SPECIFICATIONS:

The personal computer/ word processor must (1) telecommunicate, (2) interface with optical character scanners, and (3) interface with photocomposition devices, in order to reduce the amount of time spent inputting and outputting documents which originate and terminate with another system. The word processor must also support multiple character sets for production of written material in non-Roman languages.

1. Telecommunication provides the ability to receive, write and store computer programs, user documentation, and library data as if it were a text document. When the user is ready, the "text" can then be telecommunicated to the main computer for processing, optimizing time on the main computer.

2. An interface with optical character scanners enables the system to "read" standard type-wrtten pages and greatly decreases the time spent in basic entry of text.

3. An interface with photocomposition devices allows preparation of professional quality typesetting without requiring that the text be retyped into a typesetter. This eliminates the proofing of the newly

input text and reduces the overall production time of photo-read copy.

GENERAL HARDWARE REQUIREMENTS:

1. The microcomputers must interface with the Ultimate computer system and it is highly desirable that they interface with the UHCC's IBM 3081 and DEC 2060. (NOTE: UHCC has already written software for most PC's to link to these computers.)

2. The display screen must minimize health hazards and maximize comfortable use (e.g. have high resolution black lettering on white non-glare screens). (See the report by the SCLAP ergonomics subcommittee in Appendix B).

3. Laser and ink jet or other non-impact dot matrix graphics printers must be compatible with the microcomputer and allow for downloading to the printer of any character or combination of characters or image that can be displayed on the screen. The printers should be able to utilize both tractor and friction feed for paper.

4. The microcomputers must have Local Area Network (LAN) capabilities. They should be able to interconnect and share common peripherals such as Optical Character Recognition devices (OCR), laser printer and modems. LAN system requirements include the need for an intelligent file server with minimally 40-megabyte hard-disk system for electronic mail facilities and print spooling. (Apple talk and IBM PC LAN have these capabilities.)

5. There must be the capability for synchronous and asynchronous data communications at a minimum of 56K bits per second (bps).

6. The capability to support 32 network nodes must exist for attachment of workstations, output (printers) and input (OCR) devices at a distance of approximately 200-300 meters between nodes (distributable). The microcomputers must be flexible enough to allow for easy relocation of workstations and devices.

7. Software must be available which supports integrated or linked word processing, spreadsheet generation, graphics, relational database creation, and communications and be easy to use and learn. The software should include the ability to have multiiple documents open at once and to cut and paste between them; to update multiple files without opening them all individually; to suppress sensitive information through the use of varying display formats; to produce graphics such as charts and graphs and enable telephone communications with or without modems.

A. GENERAL REQUIREMENTS FOR COMMUNICATIONS:

The microcomputers must be:

1. Resistant to radio frequency interference (RFI) or static discharge;

2. Provide 16 to 32 network nodes without requiring special network configuration;

3. Be capable of a 64-192 kilobits persecond (bps) data transfer rate using CCITT (Comite Consultatif Internationa Telephonique et Telegraphique) standards;

4. Allow 150-300 meters maximum distance between nodes;

5. Be compatible with the International Standards Organization (ISO) Open Systems Interconnections (OSI) model. Protocol must be equivalent to the ISO OSI layers 1 through 5 (physical, data link, network, transport, and session);

6. Operate using an access scheme based on a carrier sense multiple access with collision avoidance (CSMA/CA) model.

OFFICE INFORMATION SYSTEM — UHM LIBRARY